ADDITIONAL

Service Manual

PIONEER

ORDER NO.
ARP 1051-0

FM/AM DIGITAL SYNTHESIZER TUNER

F-X303Z(BK) Z,ZUC

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1. CONTRAST OF MISCELLANEOUS PARTS

F-X303(BK)/Z and ZUC are the same as the F-X303(BK)/ZEB with the except for following sections.

Mark	Symbol & Description	Part No.			Remarks
		F-X303ZL(BK) ZEB type	FX-303Z(BK) Z type	FX-X303Z(BK) ZUC type	
	Packing case	AHE-697	AHD1022	AHD1022	
	Front panel assembly	ANY-211	AMB1022	AMB1022	
	Complex assembly	GWM-458	GWM-506	GWM-506	

2. ELECTRICAL PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω	56 × 10¹	561	RD¼PS 5 6 1 J
47kΩ	47 × 10³	473	RD¼PS 4 7 3 J
0.5Ω	0R5		RN2H 0 R 5 K
1Ω	010		RS1P 0 1 0 K

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10¹	5621	RN¼SR 5 6 2 1 F

- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★ .*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Complex assembly	GWM-506
	Display assembly	Non supply

OTHERS

Mark	Symbol & Description	Part No.
	Relay cord	ADE1003
	FM Antenna	ADH-005
	Loop Antenna	ATB-113

Complex Assembly (GWM-506)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC201 FM IC	PA3001-A
★★	IC301 AM IC	LA1247
★★	IC501 MPX IC	HA12016
★★	IC504 REGURATOR IC	μPC78M05H
★★	IC602 MIDI VS TUNER	PD4072-B
★★	IC701 PLL IC	LM7000
★★	Q607, Q705, Q708	RN1201
★★	Q408	RN1203
★★	Q505, Q703, Q707	2SA933S (2SA1048) (2SA1115)
★★	Q207, Q301, Q407, Q409—Q411, Q604—Q606, Q608, Q609, Q701, Q702	2SC1740S (2SC2458) (2SC2603)
★★	Q203, Q206	2SC2668
★★	Q202	2SC2786
★★	Q506, Q507	2SK246
★★	Q503, Q504	2SC2878
★★	Q204, Q205	2SK161-Y
★★	Q201	2SK241-Y
★	D607	RD6.8E B
★	D301, D302	SVC331 C3/D3
★	D206—D208, D403—D405, D407, D501—D508, D601, D603—D606, D608, D609, D614—D616	1SS131
★	D201—D203 D509	1SV147 10E2

SWITCH

Mark	Symbol & Description	Part No.
★★	S501 Slide switch (AM FREQUENCY STEP SELECT / FM DE-ENPHASIS SELECT)	ASH-034

COILS, TRANSFORMERS AND FILTERS

Mark	Symbol & Description	Part No.
	T301 AM Antenna transformer	ATB-099
	T201 FM RF transformer	ATC-194
	T202 FM Coupling transformer	ATE-063
	L301 AM OSC coil	ATB-100
	L201 FM Antenna coil	ATC-192
	L202 FM Antenna coil	ATC-193
	L205 FM OSC coil	ATC-214
	L208 FM DET coil	ATE-074
	L203, L204, L206, L207 Inductor (2.2 μH)	ATH-049
	F201 FM Ceramic filter	ATF-107
	F202 FM Ceramic filter	ATF-119
	F301 AM Ceramic filter	ATF-133

CAPACITORS

Mark	Symbol & Description	Part No.
	C601 Electrolytic(3300/10V)	ACH-389
	TC301, TC302 Ceramic trimmer	ACM-015
	C309	CCCCH030C50 (CCDCH030C50)
	C232	CCCCH040C50 (CCDCH040C50)
	C605, C606	CCCCH100D50 (CCDCH100D50)
	C703, C704	CCCCH120J50 (CCDCH120J50)
	C304	CCCCH150J50 (CCDCH150J50)
	C219	CCDSL070D50
	C325	CCCSL101J50 (CCDSL101J50)
	C228	CCCSL221J50 (CCDSL221J50)
	C210	CCDCH030C50
	C216	CCDCH080D50
	C214	CCDCH150J50
	C215	CCDCH330J50
	C201, C202, C204, C205	CCDRH390J50
	C207	CCDSL020C50
	C208	CCDSL050C50
	C209	CCDSL101J50
	C217	CCDTH180J50
	C702	CEASR22M50
	C509, C511	CEASR68M50
	C230, C411, C503, C608	CEAS010M50
	C233, C308, C505, C552, C705, C707, C709	CEAS100M25
	C542	CEAS2R2M50
	C602	CEAS220M16
	C523	CEAS221M16
	C502, C504	CEAS3R3M50
	C604, C701	CEAS330M16
	C323, C324	CEAS4R7M50
	C609	CEAS470M16
	C322, C506	CEAS470M25
	C526	CEAS471M10
	C305, C315, C507, C508, C711	CKCYB102K50 (CKDYB102K50)
	C540, C541	CKCYB222K50 (CKDYB222K50)
	C317	CKCYB332K50 (CKDYB332K50)
	C607	CKCYB472K50 (CKDYB472K50)
	C528, C529	CKCYB561K50 (CKDYB561K50)
	C229, C301, C307, C311—C314, C318, C708	CKCYF103Z50 (CKDYF103Z50)
	C222, C223, C226, C227, C231, C302, C310, C319, C320, C321, C326, C327	CKCYF223Z50 (CKDYF223Z50)
	C306, C525	CKCYF473Z50 (CKDYF473Z50)
	C224	CKCYX473M25 (CKDYX473M25)
	C203, C206, C212, C218, C235, C225	CKDYF103Z50
	C316	CQMA473J50
	C501	CQSA102J50
	C303	CQSA431J50
	C712	CKDYF223Z50

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR501 Semi-fixed (3.3K)	VRTB6VS332
	R538, R539	RD1/2PM301J
	R310	RD1/4PM151J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	4P Terminal (ANTENNA)	AKA-017
★	X701 Crystal resonator	ASS-025
★	X601 Crystal resonator	ASS-029

Display Assembly
SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	Q801, Q802, Q806	RN1201 (DTC143ES)
★★	Q803, Q804	2SA933S (2SA1048) (2SA1115)

Mark	Symbol & Description	Part No.
★★	Q805	2SC1740S (2SC2458) (2SC2603)
★	D804 LED (STEREO)	AEL-429
★	D803 LED (TUNED)	AEL-459
★	D805—D807	1SS131

SWITCH

Mark	Symbol & Description	Part No.
★★	S802—S805 Tact switch (MEMORY, TUNE+, TUNE−, BAND SELECTOR)	ASG-711 (ASG-703)
★★	S806 Push switch (TUNING MODE, AUTO-MANUAL)	SEAV2S

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

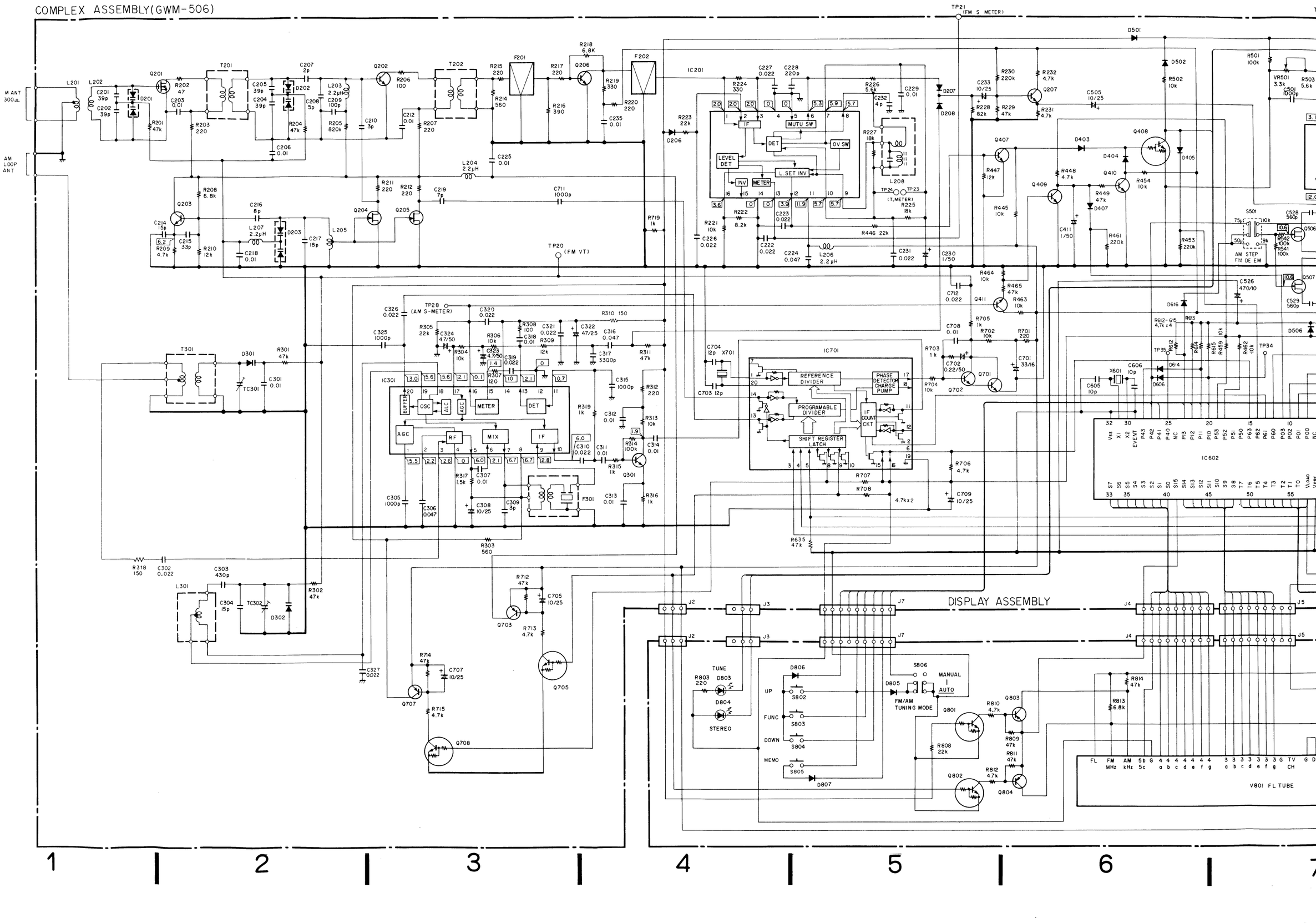
Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

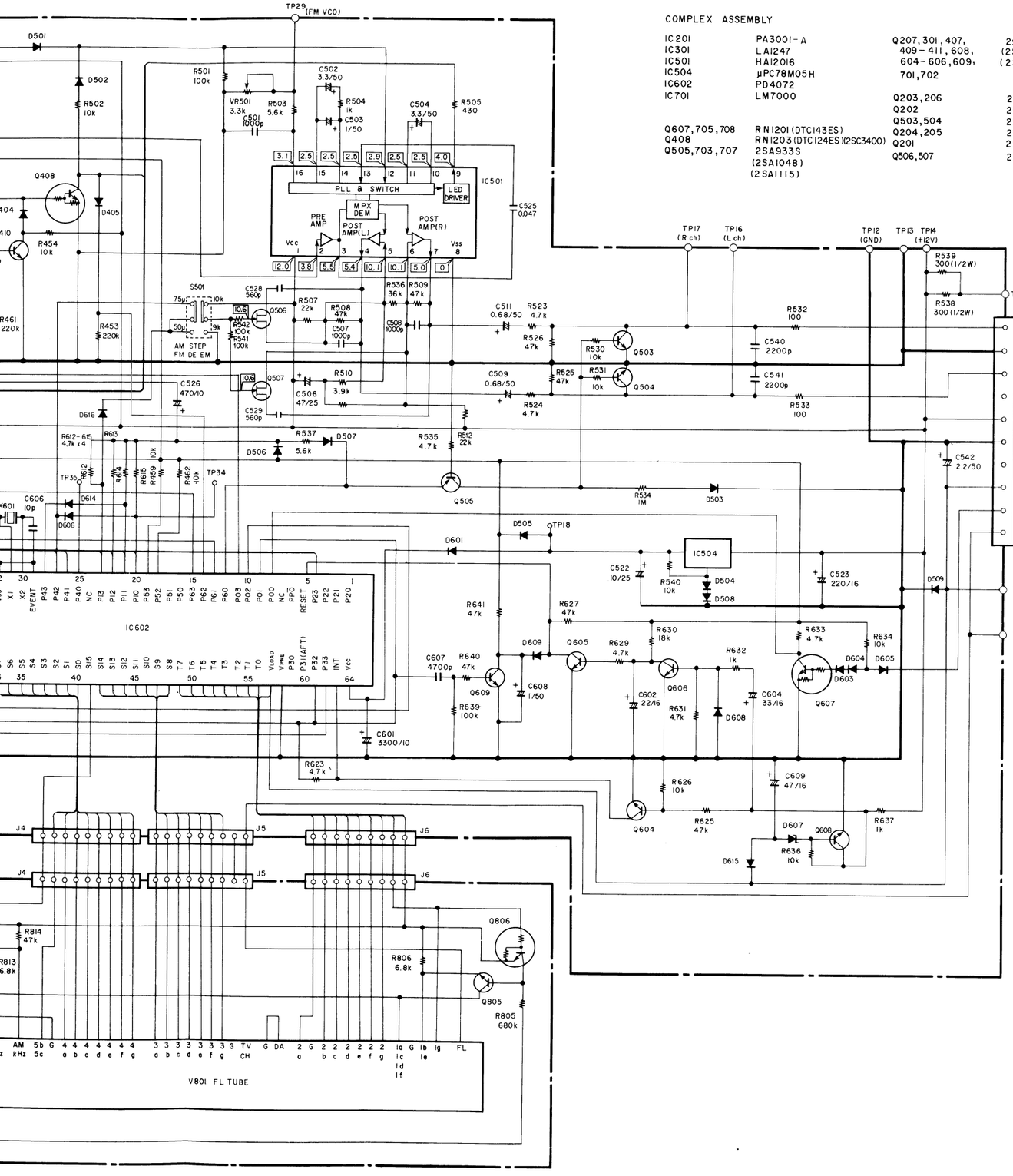
OTHER

Mark	Symbol & Description	Part No.
★	V801 Fluorenscent tube	AAV-037

3. SCHEMATIC DIAGRAM

COMPLEX ASSEMBLY(GWM-506)





COMPLEX ASSEMBLY

IC201	PA3001-A	Q207,301,407, 409-411,608, 604-606,609, 701,702	2SC1740S (2SC2458) (2SC2603)
IC301	LA1247		
IC501	HA12016		
IC504	μPC78M05H		
IC602	PD4072		
IC701	LM7000		
Q607,705,708	RN1201(DTC143ES)	Q203,206	2SC2668
Q408	RN1203(DTC124ES)(2SC3400)	Q202	2SC2786
Q505,703,707	2SA933S (2SA1048) (2SA1115)	Q503,504	2SC2878
		Q204,205	2SK161-Y
		Q201	2SK241-Y
		Q506,507	2SK246

D607	RD6.8EB(HZ6.8EB)
D301,302	SVC321C3/D3
D206-208, 403-405,407, 501-508,601, 603-609, 614-616	ISS131
D201-203	ISV147
D509	10E2

C601	ACH-389
TC301,302	ACM-015
VR501	VRTB6VS332
X701	ASS-025
X601	ASS-029
S501	ASH-034
L203,204,206,207	ATH-049

DISPLAY ASSEMBLY

Q801,802,806	RN1201(DTC143ES)
Q803,804	2SA933S(2SA1048)(2SA1115)
Q805	2SC1740S (2SC2458)(2SC2603)
D804	AEL-429
D803	AEL-459
D805-807	ISS131
S802-805	ASG-711 (ASG-703)
S806	SEAV2S
V801	AAV-037

1. RESISTORS:
Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance
2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF
Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT:
▭; DC voltage (V) at no input signal Value in ( ) is DC voltage at rated power.
Note: Voltage of IC301, Q301 are indicated on AM position.
All other FM position.
⇦ mA; DC current at no input signal
4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
✕ marked capacitors and resistors have parts unmbers.
The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
5. SWITCHES:

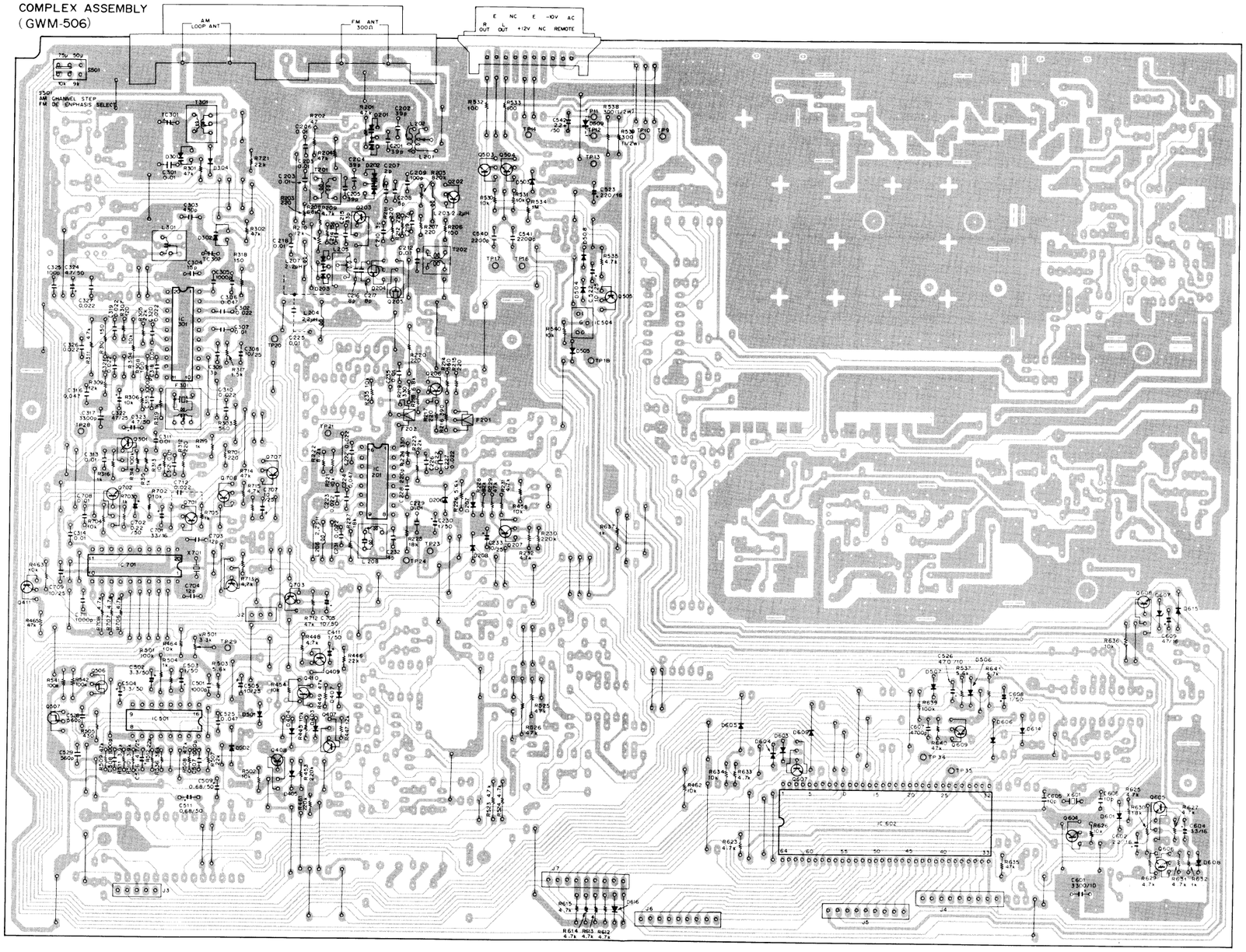
THE UNDERLINED INDICATES THE SWITCH POSITION

S802	UP	ON-OFF
S803	FUNK	ON-OFF
S804	DOWN	ON-OFF
S805	MEMO	ON-OFF
S806		AUTO-MANUAL
S501	AM STEP	9k-10k
	FM DE ENPHASIS SELECT	

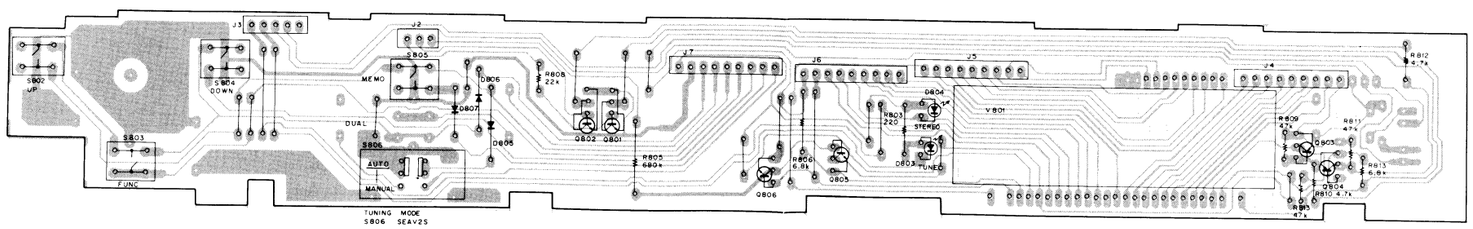
NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

4. P.C.BOARDS CONNECTION DIAGRAM

COMPLEX ASSEMBLY
(GWM-506)



DISPLAY ASSEMBLY



IC201 : PA3001-A
IC301 : LA1247

IC501 : HA12016

IC504 : μPC78M05H

IC602 : PD4072-B
IC701 : LM7000

Q202 : 2SC2786
Q203,206 2SC2668

Q505,703,707 2SA933S (2SA1048)(2SA1115)

Q207,301,407, 409-411, 604-606,609, 608,701,702 2SC1740S (2SC2458) (2SC2603)
Q201 : 2SK241-Y
Q204,205 : 2SK161-Y

Q607,705,708 RN1201 (DTC143ES)

Q408 RN1203 (DTC124ES)(2SC3400)

Q503,504 : 2SC2878
Q506,507 : 2SK246

D607 RD6.8EB(HZ6.8EB)

D206-208,407, 403-405, 501-508,601, 603-609,614-616 1SS131

D201-203 1SV147
D301,302 SVC321C3/C3
D509 10E2

Q805 : 2SC1740S(2SC2458)(2SC2603)
Q801,802,806 : RN1201(DTC143ES)
Q803,804 : 2SA933S (2SA1048)(2SA1115)

D804 : AEL-429
D803 : AEL-459
D805 - 807 : 1SS131

Q408, Q607, 705, 708, 801, 802, 806